

AmendmentFOR THE CLAIMS

Claim 1. (Currently amended) A method of cleaning a dual damascene structure, comprising:

providing a substrate, wherein a first metal layer, a cap layer, and a dielectric layer are formed in sequence on the substrate;

forming a dual damascene opening in the dielectric layer and the cap layer to expose the first metal layer;

performing a post-etching cleaning step to clean the dual damascene opening using a fluorine-based organic solvent, wherein the fluorine-based organic solvent includes an organic solvent with fluoride acetate acid as a principal solvent; and

sputtering an argon gas to clean the dual damascene opening before forming a second metal layer in the dual damascene opening.

Claim 2. Currently cancelled.

Claim 3. (Currently amended) The method of claim 1, wherein the fluorine-based organic solvent has a chelating agent and an oxidizing agent.

Claims 4-5. Currently cancelled.

Claim 6. (Original) The method of claim 1, wherein a sputtering power is between 75 and 300 watts to sputter the argon gas in the dual damascene opening.

Claim 7. (Original) The method of claim 1, wherein a sputtering time is about 10 to 30 seconds to sputter the argon gas in the dual damascene opening.

Claim 8. (Original) The method of claim 1, wherein the material of the cap layer is silicon nitride (SiN).

Claim 9. (Original) The method of claim 1, wherein the material of dielectric layer has a low dielectric constant (low-k), and is silicate based or an organic material.

Claims 10-20 (Previously withdrawn)